IN THE CLAIMS

The following is a complete listing of the claims, which replaces all previous versions and listings of the claims.

Listing of Claims

What is claimed is:

1.   (currently amended) A method of providing parameters for decomposing images using log-subtraction techniques from first and second energy images acquired from a digital radiography imaging system, comprising:

identifying energy levels of the first and second energy images;

identifying a patient size of a patient being imaged by the digital radiography imaging system;

identifying a filtration setting of a collimator for the digital radiography imaging system;

obtaining a default log-subtraction decomposition parameter for the energy levels of the first and second energy images; and

automatically providing a soft tissue log-subtraction decomposition parameter and a bone log-subtraction decomposition parameter by modifying the default log-subtraction decomposition parameter based on the patient size and the filtration setting.

2.   (previously presented) The method of claim 1, wherein identifying the energy levels comprises:

identifying a low-energy level for the first energy image; and

identifying a high-energy level for the second energy image.

3.   (previously presented) The method of claim 1, wherein identifying the patient size comprises identifying a size category for the patient.

4.   (previously presented) The method of claim 3, wherein identifying the patient size comprises selecting a patient size offset factor based on the size category.

5.   (previously presented) The method of claim 1, wherein identifying the filtration setting comprises selecting a filtration offset factor based on the filtration setting.

6.   (currently amended) The method of claim 1, wherein obtaining the default <u>log-subtraction</u> decomposition parameter comprises selecting the default <u>log-subtraction</u> decomposition parameter from a parameter table comprising a plurality of default decomposition parameters, each corresponding to a low-energy level of the first energy image and to a high-energy level of the second energy image.

7.   (previously presented) The method of claim 1, comprising evaluating the energy levels against energy range restrictions.

8.   (currently amended) The method of claim 7, wherein automatically providing the soft tissue and bone <u>log-subtraction</u> decomposition parameters is performed only if the energy levels are within the energy range restrictions.

9.   (currently amended) The method of claim 1, comprising:
        decomposing soft tissue and bone images based on the soft tissue and bone <u>log-subtraction</u> decomposition parameters;
        modifying at least one parameter of the soft tissue and bone <u>log-subtraction</u> decomposition parameters to improve image clarity of at least one image of the soft tissue and bone images interactively; and
        automatically modifying at least one system default based on modifications to the at least one parameter.

10.   (previously presented) The method of claim 9, wherein modifying at least one parameter comprises interactively improving the at least one image by modifying the at least one parameter using a sliding scale.

11.   (previously presented) The method of claim 9, wherein automatically modifying the at least one system default comprises modifying a system configuration file comprising system parameters.

12.   (currently amended) The method of claim 9, wherein automatically modifying the at least one system default comprises modifying a default decomposition parameter table for the default log-subtraction decomposition parameter.

13.   (previously presented) The method of claim 9, wherein automatically modifying the at least one system default comprises modifying a patient size offset factor for the patient size.

14.   (previously presented) The method of claim 9, wherein automatically modifying the at least one system default comprises modifying a filtration offset factor for the filtration setting.

15.   (currently amended) A method of decomposing soft tissue and bone images from low and high-energy images acquired by a digital radiography imaging system using log-subtraction techniques, comprising:

        obtaining the low and high-energy images for a desired anatomy of a patient;
        identifying a patient size of the patient;
        identifying a filtration setting for the digital radiography imaging system;
        obtaining a default log-subtraction decomposition parameter;

automatically providing a soft tissue <u>log-subtraction</u> decomposition parameter and a bone <u>log-subtraction</u> decomposition parameter by modifying the default <u>log-subtraction</u> decomposition parameter based on the patient size and the filtration setting; and

decomposing the soft tissue and bone images from the low and high-energy images based on the soft tissue and bone <u>log-subtraction</u> decomposition parameters.

16.   (previously presented) The method of claim 15, wherein obtaining the low and high-energy images for the desired anatomy comprises obtaining low and high-energy chest images.

17.   (currently amended) The method of claim 15, wherein obtaining the default <u>log-subtraction</u> decomposition parameter comprises:

identifying a low-energy level for the first energy image;

identifying a high-energy level for the second energy image; and

selecting the default <u>log-subtraction</u> decomposition parameter based on both the low and high-energy levels.

18.   (previously presented) The method of claim 15, wherein identifying the patient size comprises identifying a size category for the patient.

19.   (previously presented) The method of claim 18, wherein identifying the patient size comprises selecting a patient size offset factor based on the size category.

20.   (previously presented) The method of claim 15, wherein identifying the filtration setting comprises selecting a filtration offset factor based on the filtration setting.

21.   (currently amended) The method of claim 15, wherein obtaining the default <u>log-subtraction</u> decomposition parameter comprises selecting the default <u>log-subtraction</u>

decomposition parameter from a parameter table comprising a plurality of default log-subtraction decomposition parameters, each corresponding to a low-energy level of the first energy image and to a high-energy level of the second energy image.

22. (currently amended) The method of claim 15, comprising:

modifying at least one parameter of the soft tissue and bone log-subtraction decomposition parameters to improve image clarity of at least one image of the soft tissue and bone images interactively; and

automatically modifying at least one system default based on modifications to the at least one parameter.

23. (previously presented) The method of claim 22, wherein modifying at least one parameter comprises interactively improving the at least one image by modifying the at least one parameter using a sliding scale.

24. (previously presented) The method of claim 22, wherein automatically modifying the at least one system default comprises modifying a system configuration file comprising system parameters.

25. (previously presented) The method of claim 22, wherein automatically modifying the at least one system default comprises modifying a default decomposition parameter table for the default decomposition parameter.

26. (currently amended) A method of producing soft tissue and bone images of the desired anatomy of a patient using log-subtraction techniques, comprising:

acquiring low and high-energy images of the desired anatomy from a digital radiography imaging system using flat-panel detector technology;

identifying a patient size of the patient;

identifying a filtration setting for the digital radiography imaging system;

obtaining a default <u>log-subtraction</u> decomposition parameter based on energy levels of the low and high-energy images;

automatically providing a soft tissue <u>log-subtraction</u> decomposition parameter and a bone <u>log-subtraction</u> decomposition parameter by modifying the default <u>log-subtraction</u> decomposition parameter based on the patient size and the filtration setting; and

decomposing soft tissue and bone images of the desired anatomy from the low and high-energy images using the soft tissue and bone <u>log-subtraction</u> decomposition parameters to perform a log-subtraction dual-energy decomposition computation.

27.   (previously presented) The method of claim 26, wherein acquiring the low and high-energy images of the desired anatomy comprises acquiring low and high-energy chest images over a time interval.

28.   (previously presented) The method of claim 26, wherein identifying the patient size comprises identifying a size category for the patient.

29.   (previously presented) The method of claim 28, wherein identifying the patient size comprises selecting a patient size offset factor based on the size category.

30.   (previously presented) The method of claim 26, wherein identifying the filtration setting comprises selecting a filtration offset factor based on the filtration setting.

31.   (currently amended) The method of claim 26, wherein obtaining the default <u>log-subtraction</u> decomposition parameter comprises selecting the default <u>log-subtraction</u> decomposition parameter from a parameter table comprising a plurality of default <u>log-subtraction</u> decomposition parameters, each corresponding to a low-energy level of the first energy image and to a high-energy level of the second energy image.

32.   (currently amended) The method of claim 26, comprising:

modifying at least one parameter of the soft tissue and bone <u>log-subtraction</u> decomposition parameters to improve image clarity of at least one image of the soft tissue and bone images interactively; and

automatically modifying at least one system default based on modifications to the at least one parameter.

33.   (previously presented) The method of claim 32, wherein modifying at least one parameter comprises interactively improving the at least one image by modifying the at least one parameter using a sliding scale.

34.   (previously presented) The method of claim 32, wherein automatically modifying the at least one system default comprises modifying a system configuration file comprising system parameters.

35.   (previously presented) The method of claim 32, wherein automatically modifying the at least one system default comprises modifying a default decomposition parameter table for the default decomposition parameter.

36.   (currently amended) A computer program for automatically providing <u>log-subtraction</u> decomposition parameters for decomposing soft tissue and bone images from low and high-energy images acquired from a digital radiography imaging system <u>using log-subtraction techniques</u>, comprising:

a tangible medium configured to support machine-readable code; and

machine-readable code supported on the medium and including:

a routine for obtaining a default <u>log-subtraction</u> decomposition parameter based on energy levels of the low and high-energy images; and

a routine for automatically providing a soft tissue <u>log-subtraction</u> decomposition parameter and a bone <u>log-subtraction</u> decomposition parameter by modifying the default <u>log-subtraction</u> decomposition parameter based on a patient size and a filtration setting of the digital radiography imaging system.

37.   (original) The computer program of claim 36, wherein the machine-readable code comprises a routine for identifying a size category for a patient being imaged by the digital radiography imaging system.

38.   (previously presented) The computer program of claim 37, wherein the routine for identifying the size category comprises a routine for selecting a patient size offset factor based on the size category.

39.   (original) The computer program of claim 36, wherein the machine-readable code comprises a routine for selecting a filtration offset factor based on a filtration setting of the digital radiography imaging system.

40.   (currently amended) The computer program of claim 36, wherein the routine for obtaining the default <u>log-subtraction</u> decomposition parameter comprises a routine for selecting the default <u>log-subtraction</u> decomposition parameter from a parameter table comprising a plurality of default <u>log-subtraction</u> decomposition parameters, each corresponding to a low-energy level of the first energy image and to a high-energy level of the second energy image.

41.   (currently amended) The computer program of claim 36, wherein the machine-readable code comprises:

a decomposition routine for decomposing the soft tissue and bone images based on the soft tissue and bone <u>log-subtraction</u> decomposition parameters;

an image enhancement routine for modifying at least one parameter of the soft tissue and bone log-subtraction decomposition parameters to improve image clarity of at least one image of the soft tissue and bone images interactively; and

a system update routine for automatically modifying at least one system default based on modifications to the at least one parameter.

42.   (original) The computer program of claim 41, wherein the image enhancement routine comprises an interactive slider mechanism adapted to interactively improve the at least one image by re-decomposing the at least one image using the modified at least one parameter.

43.   (original) The computer program of claim 41, wherein the system update routine comprises a decomposition parameter modification routine for modifying a system configuration file comprising system parameters.

44.   (original) The computer program of claim 41, wherein the system update routine comprises a default parameter modification routine for modifying a default decomposition parameter table for the default decomposition parameter.

45.   (currently amended) A medical imaging system, comprising:
a digital radiographic imaging system, comprising:

an x-ray device adapted to generate x-rays;

a collimator adapted to filter the x-rays in a desired anatomical region of a
patient;

a flat-panel digital x-ray detector adapted to detect x-rays passing through the
patient; and

dual-energy control circuitry adapted to acquire low and high-energy images of
the desired anatomical region over a time interval; and

an image processing system, comprising:

an automatic decomposition parameter selection module adapted to compute

soft tissue and bone <u>log-subtraction</u> decomposition parameters by

modifying a default <u>log-subtraction</u> decomposition parameter based

on a patient size category and a filtration setting of the collimator;

and

a dual-energy image decomposition module adapted to decompose soft tissue

and bone images from the low and high-energy images based on the

soft tissue and bone <u>log-subtraction</u> decomposition parameters.

46.   (currently amended) The system of claim 45, wherein the image processing

system comprises:

an image enhancement module adapted to modify at least one parameter of the soft

tissue and bone <u>log-subtraction</u> decomposition parameters to improve image clarity of at least

one image of the soft tissue and bone images interactively; and

a system update module adapted to modify at least one system default based on

modifications to the at least one parameter.

47.   (currently amended) The system of claim 46, wherein the system update

module comprises a default parameter modification correction module for modifying a default

decomposition parameter table for the default <u>log-subtraction</u> decomposition parameter.

48.   (currently amended) A system for decomposing soft tissue and bone images

from low and high-energy images acquired by a digital radiography imaging system <u>using a</u>

<u>log-subtraction technique</u>, comprising means for automatically providing a soft tissue <u>log-</u>

<u>subtraction</u> decomposition parameter and a bone <u>log-subtraction</u> decomposition parameter

based on a default <u>log-subtraction</u> decomposition parameter, a patient size, and a

collimator filtration setting.

49.   (original) The system of claim 48, comprising means for identifying a patient size correction factor for a patient being imaged by the digital radiography imaging system.

50.   (original) The system of claim 48, comprising means for identifying a filtration correction factor based on the collimator filtration setting of the digital radiography imaging system.

51.   (currently amended) The system of claim 48, comprising means for obtaining a the default log-subtraction decomposition parameter based on energy levels of the low and high energy images.

52.   (original) The system of claim 48, comprising means for decomposing the soft tissue and bone images from the low and high-energy images.

53.   (original) The system of claim 48, comprising means for acquiring the low and high-energy images from the digital radiography imaging system.

54.   (currently amended) The system of claim 48, comprising means for interactively improving image clarity of at least one image of the soft tissue and bone images by modifying at least one parameter of the soft tissue and bone log-subtraction decomposition parameters interactively.

55.   (original) The system of claim 54, comprising means for automatically modifying at least one system default based on modifications to the at least one parameter.